

REMARKS

Claims 1, 3-18, 20, 21, 42 and 43 are pending in the subject application. Claims 1-21, 42 and 43 have been examined and stand rejected. By way of the above amendments, claims 2 and 19 have been canceled, while claims 1, 12, 13, 20, 21 and 42 have been amended. Support for the claim amendments can be found throughout the specification. Favorable reconsideration of the application and allowance of all of the pending claims are respectfully requested in view of the above amendments and the following remarks.

The specification and drawings have been objected to for lack of the reference numeral 303 being shown in Fig. 6. In addition, the drawings have been objected to as not being in compliance with 37 C.F.R. §1.121(d). In response to these objections, Replacement Drawing Sheets are being submitted herein, with particular regard to Fig. 6 including reference numeral 303.

Claim 12 has been objected to for certain informalities. This claim has been amended to correct the noted informalities, and the Examiner is requested to withdraw the objection to this claim.

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as being vague and indefinite. In particular, the Examiner notes that the language in claim 1 of "*disposed downstream from the metering pump ... to deliver the molten polymer to a spinneret*" is vague and indefinite. Claim 1 has been amended to recite "*a plurality of flow path sets disposed downstream from the metering pump assemblies*". It is respectfully submitted that this language in amended claim 1 is clear and definite.

The Examiner further asserts that claim 18 is vague and indefinite because there is insufficient antecedent basis for "*the temperature control system of claim 15*", and the Examiner asserts that it is unclear whether claim 18 includes all, or only part of, the limitations of parent claims 1 and 15. Applicants respectfully disagree with the Examiner's assertion that claim 18 is vague and indefinite. Claim 18 depends from claim 15, which depends from claim 1. Therefore, claim 18 clearly includes all of the features of claims 1 and 15. Claim 15 recites "*The system of*

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claim 1,” where the term “*system*” in claim 15 clearly refers to the “*temperature control system*” as recited in claim 1. It is further noted that all of the claims depending from claim 1 recite the term “*system*”, which clearly refers to the “*temperature control system*” of claim 1. Therefore, it is respectfully submitted that the term “*temperature control system*” of claim 18 does not lack antecedent basis.

The Examiner is therefore requested to withdraw the rejections of the claims based upon 35 U.S.C. §112.

Claims 1-4, 6, 7, 9, 10, 13-18, 42 and 43 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,164,950 to Barbier et al. (“Barbier”); claims 1-11, 13-19, 42 and 43 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,659,989 to Uraya et al. (“Uraya”); claims 1-4, 6-21, 42 and 43 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,437,827 to Moderlak et al. (“Moderlak”); claim 8 stands rejected under 35 U.S.C. §103(a) as being unpatentable over either of Barbier and Moderlak in view of either U.S. Patent No. 5,705,203 to Andersen et al. (“Andersen”) or U.S. Patent No. 5,009,687 to Kromrey; and claims 20 and 21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Uraya in view of Moderlak. Applicant respectfully traverses these rejections in view of the above amendments to claims 1 and 42 and the following remarks.

Independent claims 1 and 42 were amended to basically include the features that were set forth in claims 2 and 19 (now canceled).

In particular, claim 1 was amended to recite a temperature control system for use in a fiber extrusion process, where the system comprises a plurality of metering pump assemblies to receive a plurality of molten polymer streams from at least one polymer supply source that is connectable to the system, each metering pump assembly including a pump chamber and a pump disposed within the pump chamber, where the pump of each metering pump assembly includes an inlet to receive a molten polymer stream from the at least one polymer supply source and a plurality of outlets to direct molten polymer from each metering pump, and a plurality of flow path sets disposed downstream from the metering pump assemblies, where each flow path set is aligned with a respective metering pump and includes a plurality of flow paths configured to

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receive molten polymer from the plurality of outlets of the respective metering pump and to deliver the molten polymer to a spinneret. Amended claim 1 further recites that each flow path set is spaced a selected distance from the other flow path sets so as to facilitate independent control of the temperature of a molten polymer flowing through each flow path set.

Independent claim 42 was amended to recite a temperature control system for use in a fiber extrusion process, where the system comprises a spin pack including a spinneret to extrude fibers from molten polymer, a spin beam oriented adjacent the spin pack and including a means to heat the spin beam and at least a portion of the spin pack to a selected temperature range, a means for independently pumping a plurality of molten polymer streams from at least one polymer supply source to the spinneret, where the means for independently pumping comprises a plurality of pump chambers, each pump chamber including a pump disposed within the pump chamber, a plurality of flow path sets, each flow path set being connected with a respective pump and including a plurality of flow paths for delivering molten polymer from the respective pump to the spinneret, a means for independently controlling the temperature of each molten polymer stream flowing within the means for independently pumping within a selected temperature range prior to delivery to the spinneret.

None of the cited references discloses or renders obvious the combined features of each of claims 1 and 42.

Barbier teaches a spinning nozzle pack 1 including melt channels 13 with insulation 17 separating different melt channels. However, Barbier fails to teach the feature of a plurality of metering pump assemblies to receive a plurality of molten polymer streams from at least one polymer supply source that is connectable to the system, each metering pump assembly including a pump chamber and a pump disposed within the pump chamber as recited in claim 1. Barbier further fails to teach the feature of a means for independently pumping comprising a plurality of pump chambers, each pump chamber including a pump disposed within the pump chamber as recited in claim 42. It is noted that this feature was previously set forth in claim 19. The Examiner appears to acknowledge the failure of Barbier to teach this feature, since claim 19 was not rejected as being anticipated by Barbier in the present Office Action. Accordingly, it is

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respectfully submitted that claims 1 and 42 are not anticipated and should be allowed over Barbier, and the Examiner is requested to withdraw the rejection of these claims based upon this reference.

Claims 3, 4, 6, 7-10, 13-18 and 43 depend from claim 1 or claim 42 and should therefore also be allowed based upon the previous remarks for their parent claims. Accordingly, the Examiner is requested to withdraw the rejections to these claims based upon Barbier (alone and in combination with Andersen or Kromrey).

Uraya teaches an apparatus for spinning a composite filament, where the spinneret includes four main parts (see Fig. 2 of Uraya): a feeding block I, a filter block II, a breaker plate III and a nozzle plate IV. The feeding block I includes tubes 3 and 3' which deliver spinning solutions to the filter block II. The filter block II includes reservoirs 2 and 2' to deliver spinning solutions to channels 5 and 5' in the breaker plate III, which in turn combine the spinning solution into an orifice 7 in nozzle plate IV.

Initially, it is noted that it is not clear whether Uraya teaches the use of a plurality of metering pump assemblies as recited in claim 1 or a means for independently pumping comprising a plurality of pump chambers, each pump chamber including a pump disposed within the pump chamber as recited in claim 42. For example, even assuming that Uraya employs a plurality of pumps to pump spinning solutions to tubes 3 and 3' of the feeding block I, there is no indication that the pumps are disposed in separate pump chambers as recited in the claims.

Further, there is no disclosure or suggestion in Uraya of providing a plurality of flow path sets disposed downstream from the metering pump assemblies, where each flow path set is aligned with a respective metering pump and includes a plurality of flow paths configured to receive molten polymer from a plurality of outlets of the respective metering pump and to deliver the molten polymer to a spinneret as recited in claim 1. There is further no disclosure or suggestion in Uraya of a plurality of flow path sets, where each flow path set is connected with a respective pump and including a plurality of flow paths for delivering molten polymer from the respective pump to the spinneret as recited in claim 42.

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At best, Uraya includes single flow paths in each flow path set. For example, one flow path set in Uraya would be a single flow path defined by tube 3 to reservoir 2, which leads to channel 5. Uraya clearly does not teach flow path sets, where each flow path set includes a plurality of flow paths as recited in claims 1 and 42. Accordingly, claims 1 and 42 are not anticipated by and should be allowed over Uraya, and the Examiner is requested to withdraw the rejection of these claims based upon this reference.

Claims 3-11, 13-18, 21 and 43 depend from claim 1 or claim 42 and should therefore also be allowed based upon the previous remarks for their parent claims. Accordingly, the Examiner is requested to withdraw the rejections to these claims based upon Uraya (alone and in combination with Moderlak).

Moderlak teaches a spinning manifold including an elongated hollow body with cavities for the conduction of a heating medium and with serial nozzle blocks. Referring to Fig. 2 of Moderlak, a plurality of pumping blocks or units 14 and 14a are shown, where spinning pumps 15 provide spinning solution to product passages, and the product passages in turn provide spinning solution to nozzle blocks 20.

There is no disclosure or suggestion in Moderlak of a plurality of metering pump assemblies to receive a plurality of molten polymer streams from at least one polymer supply source that is connectable to the system, each metering pump assembly including a pump chamber and a pump disposed within the pump chamber as recited in claim 1. There is further no disclosure or suggestion in Moderlak of a means for independently pumping that comprises a plurality of pump chambers, each pump chamber including a pump disposed within the pump chamber, as recited in claim 42. The pumps 15 of Moderlak are simply not disposed in separate pump chambers in the manner recited in claims 1 and 42. Accordingly, it is respectfully submitted that claims 1 and 42 are not anticipated and should be allowed over Moderlak, and the Examiner is requested to withdraw the rejection of these claims based upon this reference.

Claims 3, 4, 6-18, 21 and 43 depend from claim 1 or claim 42 and should therefore also be allowed based upon the previous remarks for their parent claims. Accordingly, the Examiner is requested to withdraw the rejections to these claims based upon Moderlak.

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In addition, claim 12 recites the additional feature that the chamber is defined between a top plate disposed adjacent the metering pump assemblies, and a bottom plate opposing the top plate, and the top plate further includes grooved sections disposed at selected locations between metering pump assemblies. The Examiner refers to Fig. 2 of Moderlak for the teaching of this feature. However, Applicants fail to see where this feature is expressly or implicitly taught in Fig. 2, or anywhere else for that matter, in Moderlak. Therefore, it is respectfully submitted that this feature further distinguishes the claimed invention from Moderlak.

In view of the foregoing, the Examiner is respectfully requested to find the application to be in condition for allowance with claims 1, 3-18, 20, 21, 42 and 43. However, if for any reason the Examiner feels that the application is not now in condition for allowance, the Examiner is respectfully requested to call the undersigned attorney to discuss any unresolved issues and to expedite the disposition of the application.

Submitted herewith is a petition for a three month extension of time with the requisite fees. Applicants hereby petition for any additional extension of time that may be required to maintain the pendency of this case, and any required fee for such extension is to be charged to Deposit Account No. 05-0460.

Respectfully submitted,

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Filed Electronically on: November 3, 2006